TCL
SERVICE MANUAL

21E12

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This manual is the latest at the time of printing, and does not include the modification which may be made after the printing, by the constant improvement of product

CAUTION:
Use of controls, adjustments or procedures other than those specified herein may result in hazardous radiation exposure.

CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN.

CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lighting flash with arrowhead symbol, with an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to the person.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO REDUCE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT SAFETY INSTRUCTIONS

CAUTION:

Read all of these instructions. Save these instructions for later use. Follow all Warnings and Instructions marked on the audio equipment.

1. Read Instructions- All the safety and operating instructions should be read before the product is operated.
2. Retain Instructions- The safety and operating instructions should be retained for future reference.
3. Heed Warnings- All warnings on the product and in the operating instructions should be adhered to.
4. Follow Instructions- All operating and use instructions should be followed.

FOR YOUR PERSONAL SAFETY

1. When the power cord or plug is damaged or frayed, unplug this television set from the wall outlet and refer servicing to qualified service personnel.
2. Do not overload wall outlets and extension cords as this can result in fire or electric shock.
3. Do not allow anything to rest on or roll over the power cord, and do not place the TV where power cord is subject to traffic or abuse. This may result in a shock or fire hazard.
4. Do not attempt to service this television set yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
5. Never push objects of any kind into this television set through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the television set.
6. If the television set has been dropped or the cabinet has been damaged, unplug this television set from the wall outlet and refer servicing to qualified service personnel.
7. If liquid has been spilled into the television set, unplug this television set from the wall outlet and refer servicing to qualified service personnel.
8. Do not subject your television set to impact of any kind. Be particularly careful not to damage the picture tube surface.
9. Unplug this television set from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

10.1. Do not place this television set on an unstable cart, stand, or table. The television set may fall, causing serious injury to a child or an adult, and serious damage to the appliance. Use only with a cart or stand recommended by the manufacturer, or sold with the television set. Wall or shelf mounting should follow the manufacturer's instructions, and should use a mounting kit approved by the manufacturer.

10.2. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

PROTECTION AND LOCATION OF YOUR SET

11. • Do not use this television set near water ... for example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, etc.
    • Never expose the set to rain or water. If the set has been exposed to rain or water, unplug the set from the wall outlet and refer servicing to qualified service personnel.

12. Choose a place where light (artificial or sunlight) does not shine directly on the screen.

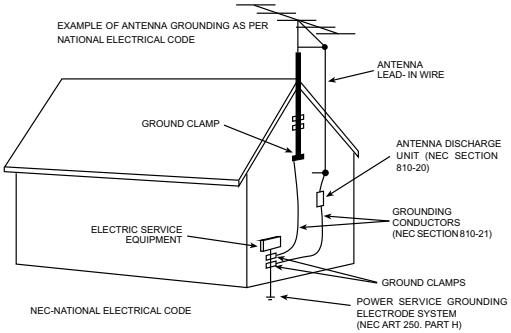
13. Avoid dusty places, since piling up of dust inside TV chassis may cause failure of the set when high humidity persists.

14. The set has slots, or openings in the cabinet for ventilation purposes, to provide reliable operation of the receiver, to protect it from overheating. These openings must not be blocked or covered.
    • Never cover the slots or openings with cloth or other material.
    • Never block the bottom ventilation slots of the set by placing it on a bed, sofa, rug, etc.
    • Never place the set near or over a radiator or heat register.
    • Never place the set in a "built-in" enclosure, unless proper ventilation is provided.

PROTECTION AND LOCATION OF YOUR SET

15.1. If an outside antenna is connected to the television set, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges, Section 810 of the National Electrical Code, NFPA No. 70-1975, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrode, and requirements for the grounding electrode.

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE INSTRUCTIONS


EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE
ANTENNA LEAD- IN WIRE
GROUND CLAMP
ANTENNA DISCHARGE UNIT (NEC SECTION 810-20)
GROUNDING CONDUCTORS (NEC SECTION 810-21)
ELECTRIC SERVICE EQUIPMENT
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250. PART H)
NEC-NATIONAL ELECTRICAL CODE

15.2. Note to CATV system installer : (Only for the television set with CATV reception)

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

16. An outside antenna system should not be located in the vicinity of overhead power lines or other electric lights or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.

17. For added protection for this television set during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna. This will prevent damage due to lightning and power-line surges.

OPERATION OF YOUR SET

18. This television set should be operated only from the type of power source indicated on the marking label.If you are not sure of the type of power supply at your home, consult your television dealer or local power company. For television sets designed to operate from battery power, refer to the operating instructions.
19. If the television set does not operate normally by following the operating instructions, unplug this television set from the wall outlet and refer servicing to qualified service personnel. Adjust only those controls that are covered in the operating instructions as improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the television set to normal operation.
20. When going on a holiday : If your television set is to remain unused for a period of time, for instance, when you go on a holiday, turn the television set "off " and unplug the television set from the wall outlet.

IF THE SET DOES NOT OPERATE PROPERLY

21. If you are unable to restore normal operation by following the detailed procedure in your operating instructions, do not attempt any further adjustment. Unplug the set and call your dealer or service technician.
22. Whenever the television set is damaged or fails, or a distinct change in performance indicates a need for service, unplug the set and have it checked by a professional service technician.
23. It is normal for some TV sets to make occasional snapping or popping sounds, particularly when being turned on or off. If the snapping or popping is continuous or frequent, unplug the set and consult your dealer or service technician.

FOR SERVICE AND MODIFICATION

24. Do not use attachments not recommended by the television set manufacturer as they may cause hazards.
25. When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
26. Upon completion of any service or repairs to the television set, ask the service technician to perform routine safety checks to determine that the television is in safe operating condition.

S PECIFICATION

MAIN UNIT

TV Receiving System		PAL M/N, NTSC-M
AV Colour System		NTSC3.58, NTSC4.43, PAL4.43, PAL M, PAL N
Channel Coverage	**VHF**	2-13
	UHF	14-69
	CATV	2-13, a-w,w+1~W+84, A-5~A-1, 5A
Tuning system		181 Channel Frequency synthesized tuning system
Channel Access		Direct Access Keyboard Programmable Scan Up/Down
Language of OSD		English, Spanish, French and Portuguese
Antenna Input		VHF/UHF/CATV 75OHM Unbalanced (F-Type)
CRT Size		340MM(Visible)
Video Input/Output		75-ohm 1.0Vp-p, RCA
Audio Input		10k ohm 0.5 Vrms, high impedance
Audio Output		1k ohm 0.5 Vrms
Audio Output Power		≥ 1.5W+1.5W
Operating Voltage		110-240V∿, 50/60Hz
Power Consumption		70W
Power Consumption		< 3W(in standby mode)
Dimensions		441 X 371 X 331 MM
Net Weight		10kg

INFRA-RED REMOTE CONTROL

Features	Full Function Remote Control
Effective Distance Power	8 meters
Power Supply	DC 3V (two batteries, size AAA)

Product is subjected to change without notice.

PART NO.	SEPC	SINGLE QTY	LOCATION
11-0BC337-0BX	TRANSISTOR (NPN) BC337-40	1	Q1501
13-C73C03-02B	IC SC73C0302	1	IC1501
14-IRE05B-XX0	IR EMITTING DIODE TSAL6200	1	D1501
18-CB0221-JNX	RES. C.F. 220 OHM 1/6W +/-5%	1	R1502
18-CB0229-JNX	RES. C.F. 2.2 OHM 1/6W +/-5%	1	R1501
25-HBB479-M1X	CAP. ELEC 4.7 UF 10V +/-20%	1	C1504
26-EBP101-JCS	CAP. CER 100 PF 50V +/-5%	1	C1502
26-EBP101-JCS	CAP. CER 100 PF 50V +/-5%	1	C1501
26-EBP104-ZFS	CAP. CER 0.1UF 50V +80%/-20%	1	C1503
40-U0CASR-RMB1X	P.C.B. REMOTE HANDSET BD	1	
41-WJ0120-B00	WIRE BARE JUMPER 12MM	1	J1501
45-C0S455-KY1	CERAMIC RESONATOR 455KHZ	1	X1501
49-HS36R1-00X9A	RUBBER PAD KEYS	1	
55-HS36RB-1HA5F	LOWER CASE - REMOTE HANDSET	1	
55-HS36RD-0HA5F	BATT. DOOR - REMOTE HANDSET	1	
55-HS36RT-1HA9F	UPPER CASE - REMOTE HANDSET	1	
58-HS36R2-6UI9C	INLAY REMOTE HANDSET	1	
67-X38064-0E2	BATTERY SPRING (+/-)	1	
67-X38065-0E2	BATTERY SPRING (+)	1	
67-X38066-0E2	BATTERY SPRING (-)	1	
74-007026-60C	POLYBAG (70MMX260MMX0.06MM)	1	
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D501
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D502
18-CB0101-JNX	RES. C.F. 100 OHM 1/6W +/-5%	1	R501
18-CB0101-JNX	RES. C.F. 100 OHM 1/6W +/-5%	1	R504
18-CB0101-JNX	RES. C.F. 100 OHM 1/6W +/-5%	1	R507
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R522
18-CB0272-JNX	RES. C.F. 2.7K OHM 1/6W +/-5%	1	R524
18-CB0472-JNX	CARBON RES. C.F. 4.7K OHM 1/6W +/-5%	1	R505
18-CB0472-JNX	CARBON RES. C.F. 4.7K OHM 1/6W +/-5%	1	R508
18-CB0472-JNX	CARBON RES. C.F. 4.7K OHM 1/6W +/-5%	1	R502
18-CB0681-JNX	RES. C.F. 680 OHM 1/6W +/-5%	1	R527
18-CB0681-JNX	RES. C.F. 680 OHM 1/6W +/-5%	1	R526
18-CB0681-JNX	RES. C.F. 680 OHM 1/6W +/-5%	1	R525
18-CB0681-JNX	RES. C.F. 680 OHM 1/6W +/-5%	1	R523
18-CB0751-JNX	RES. C.F. 750 OHM 1/6W +/-5%	1	R503
18-CB0751-JNX	RES. C.F. 750 OHM 1/6W +/-5%	1	R506
18-CB0751-JNX	RES. C.F. 750 OHM 1/6W +/-5%	1	R509
18-CD0104-JNX	RES. C.F. 100K OHM 1/4W +/-5%	1	R521
18-FE0272-JNX	RES. M.O. 2.7K OHM 1/2W +/-5%	1	R514
18-FE0272-JNX	RES. M.O. 2.7K OHM 1/2W +/-5%	1	R518
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C507
26-EBP181-JCX	CAP. CER 180PF 50V +/-5% CH	1	C512
26-EBP181-JCX	CAP. CER 180PF 50V +/-5% CH	1	C511
26-EBP181-JCX	CAP. CER 180PF 50V +/-5% CH	1	C510
26-EBP681-JCS	CAP. CER 680 PF 50V +/-5%	1	C503
26-EBP681-JCS	CAP. CER 680 PF 50V +/-5%	1	C502
26-EBP681-JCS	CAP. CER 680 PF 50V +/-5%	1	C501
40-2113MH-CRC1X	P.C.B. CRT BD	1	
41-WJ0070-B00	WIRE BARE JUMPER 7MM	1	J501
10-0FR104-FBX	DIODE FR104 (FAST RECTIFIER)	1	D401
10-0FR104-FBX	DIODE FR104 (FAST RECTIFIER)	1	D402
10-0FR104-FBX	DIODE FR104 (FAST RECTIFIER)	1	D403
10-0FR104-FBX	DIODE FR104 (FAST RECTIFIER)	1	D404
10-1N4001-EBX	DIODE 1N4001 (RECTIFIER)	1	D301
10-1N4002-EBX	DIODE 1N4002 (RECTIFIER)	1	D405
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D602
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D601
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D307

10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D305
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D303
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D302
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D206
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D009
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D008
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D007
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D006
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D005
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D306
10-79C3V9-DBX	DIODE ZENER 3V9 1/2W 5%	1	D304
10-79C5V1-DBX	DIODE ZENER 5V1 1/2W 5%	1	D001
10-79C6V2-DBX	DIODE ZENER 6V2 1/2W 5%	1	D204
10-79C6V2-DBX	DIODE ZENER 6V2 1/2W 5%	1	D207
10-79C8V2-DBX	DIODE ZENER 8V2 1/2W 5%	1	D406
11-A124ES-0BX	TRANSISTOR PDTA124ES (PNP)	1	Q005
11-C124ES-0BX	TRANSISTOR PDTC124ES (NPN)	1	Q001
11-C124ES-0BX	TRANSISTOR PDTC124ES (NPN)	1	Q004
11-C124ES-0BX	TRANSISTOR PDTC124ES (NPN)	1	Q212
11-C124ES-0BX	TRANSISTOR PDTC124ES (NPN)	1	Q604
11-C144ES-0BX	TRANSISTOR PDTC144ES (NPN)	1	Q211
11-SA1015-YBX	TRANSISTOR ST2SA1015Y (PNP)	1	Q605
11-SA1015-YBX	TRANSISTOR ST2SA1015Y (PNP)	1	Q210
11-SA1015-YBX	TRANSISTOR ST2SA1015Y (PNP)	1	Q202
11-SA1015-YBX	TRANSISTOR ST2SA1015Y (PNP)	1	Q003
11-SC1815-YBX	TRANSISTOR 2SC1815-Y (NPN)	1	Q905
11-SC1815-YBX	TRANSISTOR 2SC1815-Y (NPN)	1	Q209
11-SC1815-YBX	TRANSISTOR 2SC1815-Y (NPN)	1	Q208
11-SC1815-YBX	TRANSISTOR 2SC1815-Y (NPN)	1	Q203
11-SC1815-YBX	TRANSISTOR 2SC1815-Y (NPN)	1	Q002
11-SC2482-0BX	TRANSISTOR 2SC2482	1	Q401
11-SC3779-DBX	TRANSISTOR 2SC3779D (RF AMPL)	1	Q101
18-CB0100-JNX	RES. C.F. 10 OHM 1/6W +/-5%	1	J217
18-CB0101-JNX	RES. C.F. 100 OHM 1/6W +/-5%	1	R009
18-CB0101-JNX	RES. C.F. 100 OHM 1/6W +/-5%	1	R218
18-CB0101-JNX	RES. C.F. 100 OHM 1/6W +/-5%	1	R228
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R415
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R924
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R922
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R920
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R902
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R901
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R234
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R116
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R051
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R029
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R013
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R406A
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R052
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R050
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R047
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R043
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R030
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R012
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R011
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R006
18-CB0104-JNX	RES. C.F. 100K OHM 1/6W +/-5%	1	R307
18-CB0104-JNX	RES. C.F. 100K OHM 1/6W +/-5%	1	R232
18-CB0104-JNX	RES. C.F. 100K OHM 1/6W +/-5%	1	R031
18-CB0121-JNX	RES. C.F. 120 OHM 1/6W +/-5%	1	R227

18-CB0122-JNX	RES. C.F. 1.2K OHM 1/6W +/-5%	1	R007
18-CB0123-JNX	RES. C.F. 12K OHM 1/6W +/-5%	1	R212
18-CB0151-JNX	RES. C.F. 150 OHM 1/6W +/-5%	1	R117
18-CB0151-JNX	RES. C.F. 150 OHM 1/6W +/-5%	1	R115
18-CB0153-JNX	RES. C.F. 15K OHM 1/6W +/-5%	1	R315
18-CB0183-JNX	RES. C.F. 18K OHM 1/6W +/-5%	1	R414
18-CB0220-JNX	RES. C.F. 22 OHM 1/6W +/-5%	1	R005
18-CB0220-JNX	RES. C.F. 22 OHM 1/6W +/-5%	1	R001
18-CB0221-JNX	RES. C.F. 220 OHM 1/6W +/-5%	1	R401
18-CB0221-JNX	RES. C.F. 220 OHM 1/6W +/-5%	1	R220
18-CB0221-JNX	RES. C.F. 220 OHM 1/6W +/-5%	1	R238
18-CB0221-JNX	RES. C.F. 220 OHM 1/6W +/-5%	1	R201
18-CB0221-JNX	RES. C.F. 220 OHM 1/6W +/-5%	1	R202
18-CB0221-JNX	RES. C.F. 220 OHM 1/6W +/-5%	1	R203
18-CB0222-JNX	RES. C.F. 2.2K OHM 1/6W +/-5%	1	R055
18-CB0222-JNX	RES. C.F. 2.2K OHM 1/6W +/-5%	1	R044
18-CB0223-JNX	RES. C.F. 22K OHM 1/6W +/-5%	1	R913
18-CB0223-JNX	RES. C.F. 22K OHM 1/6W +/-5%	1	R912
18-CB0223-JNX	RES. C.F. 22K OHM 1/6W +/-5%	1	R215
18-CB0224-JNX	RES. C.F. 220K OHM 1/6W +/-5%	1	R206
18-CB0271-JNX	RES. C.F. 270 OHM 1/6W +/-5%	1	R217
18-CB0271-JNX	RES. C.F. 270 OHM 1/6W +/-5%	1	R233
18-CB0303-JNX	RES. C.F. 30K OHM 1/6W +/-5%	1	R205
18-CB0331-JNX	RES. C.F. 330 OHM 1/6W +/-5%	1	R219
18-CB0332-JNX	RES. C.F. 3.3K OHM 1/6W +/-5%	1	R046
18-CB0332-JNX	RES. C.F. 3.3K OHM 1/6W +/-5%	1	R218A
18-CB0333-JNX	RES. C.F. 33K OHM 1/6W +/-5%	1	R602
18-CB0392-JNX	RES. C.F. 3.9K OHM 1/6W +/-5%	1	R213
18-CB0392-JNX	RES. C.F. 3.9K OHM 1/6W +/-5%	1	R214
18-CB0470-JNX	RES. C.F. 47 OHM 1/6W +/-5%	1	R002
18-CB0471-JNX	RES. C.F. 470 OHM 1/6W +/-5%	1	R208
18-CB0471-JNX	RES. C.F. 470 OHM 1/6W +/-5%	1	R119
18-CB0472-JNX	CARBON RES. C.F. 4.7K OHM 1/6W +/-5%	1	R003
18-CB0472-JNX	CARBON RES. C.F. 4.7K OHM 1/6W +/-5%	1	R004
18-CB0472-JNX	CARBON RES. C.F. 4.7K OHM 1/6W +/-5%	1	R015
18-CB0472-JNX	CARBON RES. C.F. 4.7K OHM 1/6W +/-5%	1	R311
18-CB0473-JNX	RES. C.F. 47K OHM 1/6W +/-5%	1	R245
18-CB0473-JNX	RES. C.F. 47K OHM 1/6W +/-5%	1	R216
18-CB0560-JNX	RES. C.F. 56 OHM 1/6W +/-5%	1	R114
18-CB0561-JNX	RES. C.F. 560 OHM 1/6W +/-5%	1	R209
18-CB0564-JNX	RES. C.F. 560K OHM 1/6W +/-5%	1	R210
18-CB0681-JNX	RES. C.F. 680 OHM 1/6W +/-5%	1	R028
18-CB0683-JNX	RES. C.F. 68K OHM 1/6W +/-5%	1	R211
18-CB0751-JNX	RES. C.F. 750 OHM 1/6W +/-5%	1	R008
18-CB0820-JNX	RES. C.F. 82 OHM 1/6W +/-5%	1	R903
18-CB0820-JNX	RES. C.F. 82 OHM 1/6W +/-5%	1	R923
18-CB0821-JNX	RES. C.F. 820 OHM 1/6W +/-5%	1	R118
18-CB0822-JNX	RES. C.F. 8.2K OHM 1/6W +/-5%	1	R606
18-CB0822-JNX	RES. C.F. 8.2K OHM 1/6W +/-5%	1	R237
18-CD0100-JNX	RES. C.F. 10 OHM 1/4W +/-5%	1	R027
18-CD0101-JNX	RES. C.F. 100 OHM 1/4W +/-5%	1	R621
18-CE0513-JNX	RES. C.F. 51K OHM 1/2W +/-5%	1	R831
18-DB0103-FNX	RES. M.F. 10K OHM 1/6W +/-1%	1	R302
18-DB0104-FNX	RES. M.F. 100K OHM 1/6W +/-1%	1	R303
18-DB0153-FNX	RES. M.F. 15K 1/6W +/-1%	1	R244
18-DB0223-FNX	RES. M.F. 1/6W 22K OHM +/-1%	1	R306
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C004
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C023
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C025
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C220

25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C227
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C231
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C311
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C603
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C901
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C902
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C907
25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	1	C016
25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	1	C101
25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	1	C240
25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	1	C211
25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	1	C900
25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	1	C605
25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	1	C903
25-BCB221-M1X	CAP. ELEC 220 UF 16V +/-20%	1	C906
25-BCB221-M1X	CAP. ELEC 220 UF 16V +/-20%	1	C418
25-BCB470-M1X	CAP. ELEC 47 UF 16V +/-20%	1	C082
25-BCB470-M1X	CAP. ELEC 47 UF 16V +/-20%	1	C423
25-BCB470-M1X	CAP. ELEC 47 UF 16V +/-20%	1	C202
25-BDB221-M1X	CAP. ELEC 220UF 25V +/-20%	1	C301
25-BEB101-M1X	CAP. ELEC 100 UF 35V +/-20%	1	C302
25-BFB109-M1X	CAP. ELEC 1 UF 50V +/-20%	1	C208
25-BFB109-M1X	CAP. ELEC 1 UF 50V +/-20%	1	C008A
25-BFB109-M1X	CAP. ELEC 1 UF 50V +/-20%	1	C203
25-BFB109-M1X	CAP. ELEC 1 UF 50V +/-20%	1	C916
25-BFB109-M1X	CAP. ELEC 1 UF 50V +/-20%	1	C915
25-BFB109-M1X	CAP. ELEC 1 UF 50V +/-20%	1	C214
25-BFB220-M1X	CAP. ELEC 22 UF 50V +/-20%	1	C106
25-BFB478-M1X	CAP. ELEC 0.47 UF 50V +/-20%	1	C218
25-BFB479-M1X	CAP. ELEC 4.7 UF 50V +/-20%	1	C304
25-BFB479-M1X	CAP. ELEC 4.7 UF 50V +/-20%	1	C310
25-BFB479-M1X	CAP. ELEC 4.7 UF 50V +/-20%	1	C104
25-BFB479-M1X	CAP. ELEC 4.7 UF 50V +/-20%	1	C216
25-BHB100-M1X	CAP. ELEC 10 UF 100V +/-20%	1	C420
25-MFB228-K1X	CAP.ELEC 0.22UF 50V +/-10%	1	C205
25-MFB478-K1X	CAP.ELEC 50V 0.47UF +/-10%	1	C236
25-MFB478-K1X	CAP.ELEC 50V 0.47UF +/-10%	1	C234
26-AIC102-KBX	CAP. CER 1000 PF 500V +/-10% B	1	C401
26-AIC102-KBX	CAP. CER 1000 PF 500V +/-10% B	1	C404
26-AIC391-KBX	CAP. CER 390 PF 500V +/-10% B	1	C409
26-EBP101-JCS	CAP. CER 100 PF 50V +/-5%	1	C002
26-EBP101-JCS	CAP. CER 100 PF 50V +/-5%	1	C001
26-EBP102-KBS	CAP. CER 1000 PF 50V +/-20%	1	C219
26-EBP102-KBS	CAP. CER 1000 PF 50V +/-20%	1	C112
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C228
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C221
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C024
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C081
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C102
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C105
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C212
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C201
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C110
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C114
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C230
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C233
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C239
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C241
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C417
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C425

26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1 C020
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1 C019
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1 C017
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1 C005
26-EBP152-KBS	CAP. CER 1500PF 50V +/-10%	1 C209
26-EBP181-JCS	CAP. CER 180 PF 50V +/-5%	1 C207
26-EBP222-KBS	CAP. CER 2.2 NF 50V +/-10%	1 C014
26-EBP270-JCS	CAP. CER 27 PF 50V +/-5%	1 C011
26-EBP272-KBS	CAP. CER 2700PF 50V +/-10%	1 C210
26-EBP331-JCS	CAP. CER 330PF 50V +/-5%	1 C018
26-EBP390-JCS	CAP. CER 39PF 50V +/-5%	1 C022
26-EBP390-JCS	CAP. CER 39PF 50V +/-5%	1 C021
26-EBP391-JCS	CAP. CER 390PF 50V +/-5%	1 C412
26-EBP391-JCS	CAP. CER 390PF 50V +/-5%	1 C403
26-EBP470-JZX	CAP. CER 47PF 50V +/-5% SL	1 C424
27-MBC103-J0X	CAP. M.P.E 0.01UF 63V+/-5%	1 C215
27-MBC104-J0X	CAP. M.P.E 0.1 UF 63V +/-5%	1 C909
27-MBC104-J0X	CAP. M.P.E 0.1 UF 63V +/-5%	1 C610
27-MBC104-J0X	CAP. M.P.E 0.1 UF 63V +/-5%	1 C309
27-MBC104-J0X	CAP. M.P.E 0.1 UF 63V +/-5%	1 C242
27-MBC224-J0X	CAP. M.P.E 0.22UF 63V +/-5%	1 C305
27-MBC474-J0X	CAP. M.P.E 0.47UF 63V +/-5%	1 C601
27-MBC474-J0X	CAP. M.P.E 0.47UF 63V +/-5%	1 C602
27-PBC222-J0X	CAP. P.E 0.0022UF 63V +/-5%	1 C213
27-PBC222-J0X	CAP. P.E 0.0022UF 63V +/-5%	1 C204
27-PBC472-J0X	CAP. P.E 0.0047UF 63V +/-5%	1 C422
27-PBC472-J0X	CAP. P.E 0.0047UF 63V +/-5%	1 C607
27-PBC472-J0X	CAP. P.E 0.0047UF 63V +/-5%	1 C608
27-PBC822-J0X	CAP. P.E 0.0082UF 63V +/-5%	1 C235
34-A109K0-1IX	COIL CHOKE 1 UH +/-10%	1 L103
34-A109K0-1IX	COIL CHOKE 1 UH +/-10%	1 L102
34-A220K0-1IX	COIL PL - 22UH +/-10% LGA0305-220K	1 L201
34-R100J2-0EX	COIL PL - 10 UH +/-5%	1 L002
34-R220J2-0EX	COIL PL - 22 UH +/-5%	1 L208
34-R220J2-0EX	COIL PL - 22 UH +/-5%	1 L207
34-R330J2-0EX	COIL PL - 33 UH +/-5%	1 L080
34-R330J2-0EX	COIL PL - 33 UH +/-5%	1 L202
34-R829J2-0EX	COIL PL - 8.2 UH +/-5%	1 L204
41-WJ0050-B00	WIRE BARE JUMPER 5MM	1 J305
41-WJ0050-B00	WIRE BARE JUMPER 5MM	1 L101
41-WJ0055-B00	WIRE BARE JUMPER 5.5 MM	1 J922
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1 J001
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1 J907
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1 R200
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1 R204
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1 R207
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1 R249
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1 J211
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1 J101
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1 J009A
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1 J210
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1 J203
41-WJ0065-B00	WIRE BARE JUMPER 6.5MM	1 J301
41-WJ0065-B00	WIRE BARE JUMPER 6.5MM	1 J208
41-WJ0065-B00	WIRE BARE JUMPER 6.5MM	1 J010
41-WJ0070-B00	WIRE BARE JUMPER 7MM	1 J223
41-WJ0070-B00	WIRE BARE JUMPER 7MM	1 J012
41-WJ0070-B00	WIRE BARE JUMPER 7MM	1 J011
41-WJ0070-B00	WIRE BARE JUMPER 7MM	1 J217A
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1 J022

41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1 J215
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1 J018
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1 J218
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1 J225
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1 J303
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1 J602
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1 J901
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1 J913
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1 J914
41-WJ0080-B00	WIRE BARE JUMPER 8 MM	1 J919
41-WJ0080-B00	WIRE BARE JUMPER 8 MM	1 J903
41-WJ0080-B00	WIRE BARE JUMPER 8 MM	1 J108
41-WJ0085-B00	WIRE BARE JUMPER 8.5MM	1 J302
41-WJ0085-B00	WIRE BARE JUMPER 8.5MM	1 J219
41-WJ0085-B00	WIRE BARE JUMPER 8.5MM	1 J209
41-WJ0085-B00	WIRE BARE JUMPER 8.5MM	1 J206
41-WJ0085-B00	WIRE BARE JUMPER 8.5MM	1 J306
41-WJ0085-B00	WIRE BARE JUMPER 8.5MM	1 J205
41-WJ0085-B00	WIRE BARE JUMPER 8.5MM	1 J920
41-WJ0090-B00	WIRE BARE JUMPER 9MM	1 J212
41-WJ0090-B00	WIRE BARE JUMPER 9MM	1 J904
41-WJ0095-B00	WIRE BARE JUMPER 9.5MM	1 J601
41-WJ0095-B00	WIRE BARE JUMPER 9.5MM	1 J231
41-WJ0095-B00	WIRE BARE JUMPER 9.5MM	1 J230
41-WJ0095-B00	WIRE BARE JUMPER 9.5MM	1 J229
41-WJ0100-B00	WIRE BARE JUMPER 10MM	1 J003
41-WJ0100-B00	WIRE BARE JUMPER 10MM	1 J017
41-WJ0100-B00	WIRE BARE JUMPER 10MM	1 J102
41-WJ0100-B00	WIRE BARE JUMPER 10MM	1 J110
41-WJ0100-B00	WIRE BARE JUMPER 10MM	1 J111
41-WJ0100-B00	WIRE BARE JUMPER 10MM	1 J221
41-WJ0100-B00	WIRE BARE JUMPER 10MM	1 J402
41-WJ0100-B00	WIRE BARE JUMPER 10MM	1 J910
41-WJ0100-B00	WIRE BARE JUMPER 10MM	1 J911
41-WJ0100-B00	WIRE BARE JUMPER 10MM	1 J917
41-WJ0100-B00	WIRE BARE JUMPER 10MM	1 J002A
41-WJ0100-B00	WIRE BARE JUMPER 10MM	1 J002
41-WJ0105-B00	WIRE BARE JUMPER 10.5MM	1 J304
41-WJ0110-B00	WIRE BARE JUMPER 11MM	1 J016
41-WJ0110-B00	WIRE BARE JUMPER 11MM	1 J226
41-WJ0115-B00	WIRE BARE JUMPER 11.5MM	1 J604
41-WJ0125-B00	WIRE BARE JUMPER 12.5MM	1 R317
41-WJ0125-B00	WIRE BARE JUMPER 12.5MM	1 J216
41-WJ0125-B00	WIRE BARE JUMPER 12.5MM	1 J106
41-WJ0130-B00	WIRE BARE JUMPER 13MM	1 J006
41-WJ0130-B00	WIRE BARE JUMPER 13MM	1 J204
41-WJ0135-B00	WIRE BARE JUMPER 13.5MM	1 J014
41-WJ0140-B00	WIRE BARE JUMPER 14MM	1 J005
41-WJ0150-B00	WIRE BARE JUMPER 15MM	1 L402
41-WJ0160-B00	WIRE BARE JUMPER 16MM	1 J105
41-WJ0165-B00	WIRE BARE JUMPER 16.5MM	1 J220
41-WJ0165-B00	WIRE BARE JUMPER 16.5MM	1 J013
41-WJ0170-B00	WIRE BARE JUMPER 17MM	1 J401
41-WJ0175-B00	WIRE BARE JUMPER 17.5MM	1 R045
41-WJ0195-B00	WIRE BARE JUMPER 19.5MM	1 J003A
41-WJ0200-B00	WIRE BARE JUMPER 20MM	1 J233
66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	9 FOR T402
66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	4 FOR C421,C406B
66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	3 FOR Q402
66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	2 FOR L411

66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	2	FOR L412
66-343740-0B0	HOLLOW RIVET (2.3MMX4.0MMX3.5MM)	2	FOR R402
10-0FR104-FBX	DIODE FR104 (FAST RECTIFIER)	1	D802
10-0RL255-EBX	DIODE RL255 OR RL206(POWER RECTIFIER	1	D815
10-0RL255-EBX	DIODE RL255 OR RL206(POWER RECTIFIER	1	D816
10-0RL255-EBX	DIODE RL255 OR RL206(POWER RECTIFIER	1	D817
10-0RL255-EBX	DIODE RL255 OR RL206(POWER RECTIFIER	1	D818
10-1N4148-ABX	DIODE 1N4148 (SWITCHING)	1	D805
10-1SS136-ABX	DIODE 1SS136	1	D804
10-1SS136-ABX	DIODE 1SS136	1	D835
10-79C8V2-DBX	DIODE ZENER 8V2 1/2W 5%	1	D839
10-HS16VC-DBX	DIODE 500MW 16HSC	1	D838
10-HS6V2B-DBX	DIODE 6V2 500MW	1	D840
11-SC1815-YBX	TRANSISTOR 2SC1815-Y (NPN)	1	Q832
11-SC1815-YBX	TRANSISTOR 2SC1815-Y (NPN)	1	Q831
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R809
18-CB0183-JNX	RES. C.F. 18K OHM 1/6W +/-5%	1	R844
18-CB0183-JNX	RES. C.F. 18K OHM 1/6W +/-5%	1	R838
18-CB0332-JNX	RES. C.F. 3.3K OHM 1/6W +/-5%	1	R834
18-CB0392-JNX	RES. C.F. 3.9K OHM 1/6W +/-5%	1	R807
18-CB0472-JNX	CARBON RES. C.F. 4.7K OHM 1/6W +/-5%	1	R806
18-CB0682-JNX	RES. C.F. 6.8K OHM 1/6W +/-5%	1	R850
18-CD0100-JNX	RES. C.F. 10 OHM 1/4W +/-5%	1	R851
18-CD0220-JNX	RES. C.F. 22 OHM 1/4W +/-5%	1	R811A
18-CD0221-JNX	RES. C.F. 220 OHM 1/4W +/-5%	1	R833
18-CD0392-JNX	RES. C.F. 3.9K OHM 1/4W +/-5%	1	R835
18-CD0471-JNX	RES. C.F. 470 OHM 1/4W +/-5%	1	R811
18-CE0479-JNX	RES. C.F. 4.7 OHM 1/2W +/-5%	1	R832
18-DD0104-FNX	RES. M.F 100K OHM 1/4W +/-1%	1	R804
18-DD0912-FNX	RES. M.F. 9.1K OHM 1/4W +/-1%	1	R804A
18-KE0105-JN3	RES. H.VOLT. CC 1M OHM 1/2W +/-5%	1	R802
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C812
25-BCB470-M1X	CAP. ELEC 47 UF 16V +/-20%	1	C845
26-ABC101-JZX	CAP. CER 100 PF 50V +/-5% SL	1	C814
26-ABC104-ZFX	CAP. CER 0.1 UF 50V +80-20% F	1	C842
26-ABC104-ZFX	CAP. CER 0.1 UF 50V +80-20% F	1	C831
26-ABC104-ZFX	CAP. CER 0.1 UF 50V +80-20% F	1	C813
26-ABC221-JZX	CAP. CER 220 PF 50V +/-5% SL	1	C841
26-ABC471-JZX	CAP. CER 470 PF 50V +/-5% SL	1	C851
26-EBP102-KBS	CAP. CER 1000 PF 50V +/-20%	1	C804A
26-EBP102-KBS	CAP. CER 1000 PF 50V +/-20%	1	C848
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C844
27-MBC104-J0X	CAP. M.P.E 0.1 UF 63V +/-5%	1	C850
41-WJ0050-B00	WIRE BARE JUMPER 5MM	1	R820
41-WJ0050-B00	WIRE BARE JUMPER 5MM	1	R821
41-WJ0050-B00	WIRE BARE JUMPER 5MM	1	R822
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1	J821
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1	J809
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1	D838A
41-WJ0085-B00	WIRE BARE JUMPER 8.5MM	1	J812
41-WJ0090-B00	WIRE BARE JUMPER 9MM	1	J805
41-WJ0100-B00	WIRE BARE JUMPER 10MM	1	R807A
41-WJ0100-B00	WIRE BARE JUMPER 10MM	1	J820
41-WJ0100-B00	WIRE BARE JUMPER 10MM	1	J822
41-WJ0105-B00	WIRE BARE JUMPER 10.5MM	1	J824
41-WJ0115-B00	WIRE BARE JUMPER 11.5MM	1	J832
41-WJ0120-B00	WIRE BARE JUMPER 12MM	1	J823
41-WJ0125-B00	WIRE BARE JUMPER 12.5MM	1	J804
41-WJ0135-B00	WIRE BARE JUMPER 13.5MM	1	J833
41-WJ0150-B00	WIRE BARE JUMPER 15MM	1	J826

41-WJ0150-B00	WIRE BARE JUMPER 15MM	1	J802
41-WJ0160-B00	WIRE BARE JUMPER 16MM	1	J825
41-WJ0165-B00	WIRE BARE JUMPER 16.5MM	1	J831
41-WJ0175-B00	WIRE BARE JUMPER 17.5MM	1	J807
41-WJ0190-B00	WIRE BARE JUMPER 19MM	1	J811
41-WJ0195-B00	WIRE BARE JUMPER 19.5MM	1	J828
41-WJ0195-B00	WIRE BARE JUMPER 19.5MM	1	J829
41-WJ0200-B00	WIRE BARE JUMPER 20MM	1	J830
66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	4	FOR T803
66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	10	FOR C835,C801,L804,D831,D830
66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	3	FOR RT801
66-343730-0B0	HOLLOW RIVET 1.6MMX3.0MMX3.2MM	4	FOR T801
66-343740-0B0	HOLLOW RIVET (2.3MMX4.0MMX3.5MM)	8	FOR R808,R836,C806,P801
18-CB0222-JNX	RES. C.F. 2.2K OHM 1/6W +/-5%	1	R016A
18-CB0470-JNX	RES. C.F. 47 OHM 1/6W +/-5%	1	R018A
40-14E10H-IRB1X	P.C.B. REMOTE HANDSET BD	1	
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	R013A
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	J001
11-C124ES-0BX	TRANSISTOR PDTC124ES (NPN)	1	Q904
11-C124ES-0BX	TRANSISTOR PDTC124ES (NPN)	1	Q902
11-C124ES-0BX	TRANSISTOR PDTC124ES (NPN)	1	Q006
11-SC1815-YBX	TRANSISTOR 2SC1815-Y (NPN)	1	Q609
11-SC1815-YBX	TRANSISTOR 2SC1815-Y (NPN)	1	Q603
11-SC1815-YBX	TRANSISTOR 2SC1815-Y (NPN)	1	Q602
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R930
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R612A
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R613A
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R637
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R911
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R925
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R927
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R928
18-CB0102-JNX	RES. C.F. 1K OHM 1/6W +/-5%	1	R931
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R010
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R919
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R025
18-CB0103-JNX	RES. C.F. 10K OHM 1/6W +/-5%	1	R917
18-CB0152-JNX	RES. C.F. 1.5K OHM 1/6W +/-5%	1	R020
18-CB0182-JNX	RES. C.F. 1.8K OHM 1/6W +/-5%	1	R021
18-CB0223-JNX	RES. C.F. 22K OHM 1/6W +/-5%	1	R910
18-CB0223-JNX	RES. C.F. 22K OHM 1/6W +/-5%	1	R909
18-CB0223-JNX	RES. C.F. 22K OHM 1/6W +/-5%	1	R908
18-CB0223-JNX	RES. C.F. 22K OHM 1/6W +/-5%	1	R907
18-CB0223-JNX	RES. C.F. 22K OHM 1/6W +/-5%	1	R613
18-CB0223-JNX	RES. C.F. 22K OHM 1/6W +/-5%	1	R612
18-CB0272-JNX	RES. C.F. 2.7K OHM 1/6W +/-5%	1	R022
18-CB0432-JNX	RES. C.F. 4.3K OHM 1/6W +/-5%	1	R023
18-CB0433-JNX	RES. C.F. 43K OHM 1/6W +/-5%	1	R026
18-CB0682-JNX	RES. C.F. 6.8K OHM 1/6W +/-5%	1	R024
18-CB0820-JNX	RES. C.F. 82 OHM 1/6W +/-5%	1	R929
18-CE0479-JNX	RES. C.F. 4.7 OHM 1/2W +/-5%	1	R918
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C919
25-BCB100-M1X	CAP. ELEC 10 UF 16V +/-20%	1	C920
25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	1	C921
25-BCB101-M1X	CAP. ELEC 100 UF 16V +/-20%	1	C904
25-BCB221-M1X	CAP. ELEC 220 UF 16V +/-20%	1	C009
25-BCB221-M1X	CAP. ELEC 220 UF 16V +/-20%	1	C918
25-BCB470-M1X	CAP. ELEC 47 UF 16V +/-20%	1	C926
25-BCB470-M1X	CAP. ELEC 47 UF 16V +/-20%	1	C928
26-EBP102-KBS	CAP. CER 1000 PF 50V +/-20%	1	C306

26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C905
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C927
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C925
26-EBP103-ZFX	CAP. CER 0.01UF 50V +80/-20% F	1	C917
40-2111SG-MAM1X	P.C. B MAIN BD	1	
41-WJ0050-B00	WIRE BARE JUMPER 5MM	1	JP001
41-WJ0050-B00	WIRE BARE JUMPER 5MM	1	J906
41-WJ0050-B00	WIRE BARE JUMPER 5MM	1	J201
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	J905
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1	J916
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1	J912
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1	J603
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1	J915
41-WJ0075-B00	WIRE BARE JUMPER 7.5MM	1	D205
41-WJ0080-B00	WIRE BARE JUMPER 8 MM	1	J835
41-WJ0080-B00	WIRE BARE JUMPER 8 MM	1	J836
41-WJ0080-B00	WIRE BARE JUMPER 8 MM	1	J908
41-WJ0090-B00	WIRE BARE JUMPER 9MM	1	J909
T8-HS36R0-A123	ASS'Y-REMOTE	1	
62-227680-0UA	BRACKET ABS-KINGFA 606 (U0)	1	
02-GND014-XX0	ASS"Y - CRT GND WIRE&HOUSE	1	
36-DEG140-AX0	DEGAUSSING COIL 1080+20MM	1	
42-50916D-XX0	SPEAKER 16 OHM 5W (50MMX90MM)	1	W601
42-50916D-XX0	SPEAKER 16 OHM 5W (50MMX90MM)	1	W602
44-140FSS-CH3A	CRT A34AGT13X53R	0.247	CRT01
44-140FSS-CH4A	CRT A34AGT13X53AR	0.753	
46-27250H-02X	HS 2P24 450/5 F/W TJC3-02H	1	P602H FOR M. BD P602
46-37144H-02X	HS 2P 2468#22 450MM S11-2Y/7MM	1	P601H FOR M. BD P601
54-113970-0U0	PVC TUBE AWG NO.5	0.32	FOR SPK HOUSING
54-114000-00X	FELT TAPE (150MMX19MMX0.3MM)	4	STICK ON FRONT CAB
55-EE10FC-1CN9M	FRONT CABINET	1	
56-B211LS-0HC5Z	LENS	1	
56-EE10FB-0HA5C	FUSH BUTTON	1	
56-EE10PK-0HA5C	POWER KNOB	1	
57-10654X-00F	TWIST TIE NY66	10	
58-DA71SI-2UI9D	INLAY SIDE AV	1	
59-130460-00X	RUBBER PAD (25MMX7MM)	2	STICK FOR FOOTING CABINET
59-312160-000	SPEAKER RUBBER CUSHION	8	
62-200990-1CN	CABINET SIDE CATCHER	1	
62-216340-0UN	HOLDER POWER CORD HIPS-KINGFA 113(V0	1	
62-377180-0HA	CONECTOR	1	
62-406120-0UN	TRACK	1	
62-416540-0CN5C	SIDE AV BRACKET	1	
63-B30080-AB4	S/T SCREW B 3 X 8 AB	1	MTG LENS & F. CAB.
63-B30080-AB4	S/T SCREW B 3 X 8 AB	3	MTG PUSH BUTTON & F. CAB.
63-S30100-AB4	S/T SCREW S 3 X 10 AB	2	MTG IR BD & F. CAB.
63-W30100-AB4	S/T SCREW W 3 X 10 AB	2	MTG SIDE AV BD & SIDE AV BKT
63-W30100-AB4	S/T SCREW W 3 X 10 AB	2	MTG SIDE AV BKT & F. CAB.
63-W30120-AB4	S/T SCREW W 3 X 12 AB	8	MTG SPK & F. CAB.
63-Z50250-AB4	S/T SCREW 5 X 25	4	MTG CRT & FRONT CAB.
67-2960LG-0A09A	LOGO	1	
67-X12668-0E0	SPRING CRT 6MMX40MMX0.5MM	1	
67-X36975-0E2	SPRING 0.7X10X18MM	1	
54-205140-000	SPACER CRT MOUNTING T=2MM	2	STICK R.CAB & M.BD
55-1475RC-5CN5F	1475REARCABINET	1	
58-2106RI-8UI9D	INLAY REAR AV	1	
58-EE10MP-JKT9N	PLATE MODEL NO.	1	
62-314340-0UN	FBT SUPPORTER HIPS-KINGFA 113 (V0)	1	
62-345700-0UN	ATTACHMENT RAIL PIPS-KINGFA 113 (V0)	1	
63-B40200-AB3	S/T SCREW B 4 X 20 AB	4	MTG FRONT & REAR CAB.

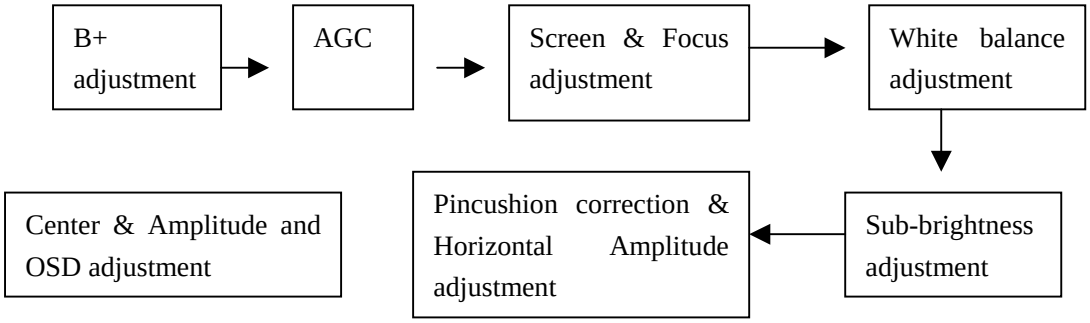
63-F30100-BT3	S/T SCREW F 3 X 10 BT		2	MTG RCA JACK & REAR CAB.
63-W30100-AB4	S/T SCREW W 3 X 10 AB		2	MTG M.BD TRACK & R. CAB.
63-W30100-AB4	S/T SCREW W 3 X 10 AB		2	MTG SUPPORTER & REAR CAB.
51-DC0243-0CH01	POWER CORD VDE PLUG W/HOUSING		1	
62-227680-1UA	FBT BRACKET		1	
36-141390-000	CONVERTER 300/75 OHM(FOR NTSC)	0.848		
36-141390-00X	Antenna converter FYM-1	0.152		
47-137000-000	ASS'Y - TWO ROD ANT. W/RIB 65CM		1	
49-382380-BAT	BATTERY 7# (R03P AAA SUM-4)		2	
70-TCLSOC-WAR9A	WARRANTY CARD		1	
71-EBG510-161B3	LABEL SERIAL NO.		3	From EBG510161B-0001
71-TCLSOC-BAR9D	LABEL BARCODE		2	
72-EE10SG-X239A	OPERATION MANUAL		1	
74-022032-6WE1A	POLYBAG		1	
74-081081-80H1A	POLYBAG		1	
75-EE10LL-CC0	POLYFOAM		1	
75-EE10LR-CC0	POLYFOAM		1	
75-EE10UL-CC0	POLYFOAM		1	
75-EE10UR-CC0	POLYFOAM		1	
76-N14E10-0AT9T	CARTON BOX		1	
10-0BY228-F0X	DIODE BY228		1	D409
10-CW574C-DJX	DIODE CW574CD		1	D101
11-DD1555-0AX	TRANSISTOR 3DD1555		1	Q402
13-00M24C-08P	IC EEPROM 8K M24C08 (WRITE)		1	IC001
13-0L7805-CVS	+5V 1.5A IC L7805CV		1	IC402
13-CW7809-CSS	IC CS7809S		1	IC401
13-STV930-2BS	IC STV9302B		1	IC301
13-TDA705-7AS	IC TDA7057AQ (R/L AUDIO O/P)		1	IC601
18-EF0109-JGX	RES. FUS. 1 OHM 1W +/-5% (LS)		1	R418
18-EF0109-JGX	RES. FUS. 1 OHM 1W +/-5% (LS)		1	R409
18-EF0109-JGX	RES. FUS. 1 OHM 1W +/-5% (LS)		1	R405
18-EF0109-JGX	RES. FUS. 1 OHM 1W +/-5% (LS)		1	R403
18-EG0159-JHX	RES. FUS. 1.5 OHM 2W +/-5%		1	R420
18-FF0102-JGX	RES. M.O. 1K OHM 1W +/-5%		1	R408
18-FF0103-JGX	RES. M.O. 10K OHM 1W +/-5%		1	R410
18-FF0123-JGX	RES. M.O. 12K OHM 1W +/-5%		1	R406
18-FF0129-JGX	RES. M.O. 1.2 OHM 1W +/-5%		1	R304
18-FF0391-JGX	RES. M.O. 390 OHM 1W +/-5%		1	R336
18-FF0472-JGX	RES. M.O. 4.7K OHM 1W +/-5%		1	R411
18-FG0153-JHX	RES. M.O. 15K OHM 2W +/-5%		1	R404
18-FG0339-JHX	RES. M.O. 3.3 OHM 2W +/-5%		1	R309
18-FH0479-JLX	RES. M.O. 4.7 OHM 3W +/-5%		1	R620
18-GJ0332-JUX1	RES.C.C.5W 3.3KOHM +/-5%		1	R402
25-BCA102-M1X	CAP. ELEC 1000 UF 16V +/-20%		1	C232
25-BDA471-M1X	CAP. ELEC 470 UF 25V +/-20%		1	C217
25-BDA471-M1X	CAP. ELEC 470 UF 25V +/-20%		1	C415
25-BDA471-M1X	CAP. ELEC 470 UF 25V +/-20%		1	C604
25-BEA102-M1X	CAP. ELEC 1000 UF 35V +/-20%		1	C413
25-BLA100-M1X	CAP. ELEC 10 UF 250V +/-20%		1	C408
25-PJA470-M1X	CAP.CELE 47UF/160V/+/-20%		1	C411
26-AMK331-JZX	CAP. CER 330 PF 2KV +/-5% SL		1	C402
27-AGQ434-JSX	CAP. M.PP 0.43UF 250V +/-5%		1	C421
27-AGQ563-J0X	CAP. M.PP 0.056 UF 250V +/-5%		1	C410
27-ALR962-J0X	CAP. M.PP 9600PF 1.6KV +/-5%		1	C406B
27-RCP333-J0X	CAP. PP 0.033 UF 100V +/-5%		1	C405
36-HDR001-AX1	TRANSFOR HOR. DRIVE (MAGNETIC CORE)		1	T401
36-LIN580-XX1	COIL LINEARITY 58 UH		1	L412
36-WID231-XX2	COIL WIDTH 230 UH		1	L411
37-FAA001-BAA0A	FLYBACK BSC25-0278Z		1	T402
45-0SC8M0-0Y0	CRYSTAL 8.0MHZ		1	X001

45-TRA4M5-0Y0	CER TRAP TPS 4.5MHZ	1 X201
46-12866W-02X	PIN BASE *2 S11-02Y	1 P601 FOR FRONT CAB.(SPK)
46-20598W-04X	PIN BASE *4 TJC1-4A	1 P401 FOR DY CONNECTER
46-33079W-02X	PIN BASE *2 TJC3-2A	1 P602 FOR FRONT CAB.(SPK)
46-33079W-05X	PIN BASE *5 TJC3-5A	1 P201 FOR CRT BD P503
46-35107W-03X	PIN BASE EH-3A	1 P001
46-35179W-04X	PIN BASE TJC3-4A	1 P402 FOR CRT BD P502
57-10654X-00F	TWIST TIE NY66	3
64-B30100-104	M/C SCREW B 3 X 10	2 FOR IC601
64-P30060-104	M/C SCREW P 3 X 6	2 FOR IC401 & IC402
64-P30100-104	M/C SCREW P 3 X 10	2 FOR Q402 & IC301
65-Z30050-23M	NUT M 3	2 FOR Q402 & IC301
67-H24249-2M2	HEAT SINK	1 FOR IC402
67-H24249-3M2	HEAT SINK	1 FOR IC401
67-H30752-3A0	HEAT SINK	2 FOR IC301 & Q402
67-H34423-EA0	HEAT SINK	1 FOR IC601
10-00RU3C-F0X	DIODE RU3C (FAST RECTIFIER)	1 D831
10-0FR104-FBX	DIODE FR104 (FAST RECTIFIER)	1 D833
10-0RU3YX-F0X	DIODE RU3YX (FAST RECTIFIER)	1 D830
10-HER108-FBX	DIODE HER108	1 D806
11-SC2688-LAX	TRANSISTOR 2SC2688L (NPN)	1 Q830
11-SK2996-0AX	TRANSISTOR 2SK2996 (MOS)	1 Q801
13-0HPC92-2CP	PHOTO COUPLER HPC922-C	1 IC802
13-44608P-40P	IC MC44608P40G	1 IC801
18-FG0333-JHX	RES. M.O. 33K OHM 2W +/-5%	1 R837
18-GJ0103-KUX1	RES.C.C.5W 10KOHM +/-10%	1 R836
18-GJ0223-KUX1	RES.C.C.5W 22KOHM +/-10	1 R808
18-KF0825-JH3	RES. H.VOLT.CC 8.2M OHM 1W +/-5%	1 R812
18-RG0228-JHX	RES. WIRE ROUND 0.22 OHM 2W +/-5%	1 R810
20-TR103H-5CX	TRIMMER B10K HORIZ TYPE	1 VR830
22-NTC479-XX0	NTC 4.7 OHM +/-18% NTC4.7D2-14	1 RT802
22-PTC200-XX1	PTC 20 OHM +/-20%	1 RT801
25-BCA102-M1X	CAP. ELEC 1000 UF 16V +/-20%	1 C849
25-BDA102-M1X	CAP. ELEC 1000 UF 25V +/-20%	1 C843
25-BDA222-M1S	CAP. ELEC 25V/2200UF/+/-20%	1 C832
25-BMJ221-M1X	CAP. ELEC 220 UF 400V +/-20%	1 C806
25-PJG101-M1X	CAP.CELE 100UF/160V/+/-20%	1 C835
26-AGK221-KRX	CAP. CER 220 PF 250V +/-10%	1 C830
26-AIM103-KBX	CAP. CER 0.01UF 500V +/-10% B	1 C805
26-AIM103-KBX	CAP. CER 0.01UF 500V +/-10% B	1 C834
26-AKK221-KRX	CAP. CER 220 PF 1KV +/-10%	1 C833
26-AMK102-KRX	CAP. CER 1000 PF 2KV +/-10% R	1 C815
26-APK222-ME4	CAP. CER 2200PF 400VAC+/-20% E	1 C816
26-APK471-KBX	CAP. CER 470PF 400VAC +/-10% B	1 C804
26-APK471-KBX	CAP. CER 470PF 400VAC +/-10% B	1 C803
26-AQK472-ZFX	CAP. CER 4700PF 250VAC +80% -20% F	1 C807
26-AQK472-ZFX	CAP. CER 4700PF 250VAC +80% -20% F	1 C808
27-AQT224-MV3	CAP.M.PP 0.22UF 250VAV +/-20%	1 C801
27-MBC104-J0X	CAP. M.P.E 0.1 UF 63V +/-5%	1 并在R838上
27-RJP472-J0X	CAP. PP 0.0047 UF 630V +/-5%	1 C809
34-R100K2-1BX	COIL CHOKE 10 UH +/-10%	1 L843
34-R101K2-1BX	COIL CHOKE 100 UH +/-10%	1 L804
35-139730-00X	FERR. BEAD BF60	2 FOR D831
35-139730-00X	FERR. BEAD BF60	2 FOR D833
35-139730-00X	FERR. BEAD BF60	2 FOR D830
35-139730-00X	FERR. BEAD BF60	2 FOR D806
36-LIF022-AX0	LINE FILTER	1 T801
36-TRF110-XX0	TRANSFORMER	1 T803
46-10962W-02X	PIN BASE *2 TJC2-2A	1 P801
64-B30100-104	M/C SCREW B 3 X 10	1 FOR Q801

66-20516X-0B0	FUSE HOLDER	2	FOR FUSE
67-H35984-5A0	HEAT SINK	1	FOR Q801
71-DYP000-WX1	LABEL	1	STICK ON HEAT SINK
07-457FF5-NX8	TUNER TEDH9-251A	1	TU101
13-000040-53P	IC 4053 (ANALOG SW)	1	IC901
13-000040-66P	IC 4066 (ANALOG SW.)	1	IC902
13-A21V01-T0P	MCU 8823KRNG(TCL-A21V01-T0)	1	IC201
45-SAWF18-590	SAW FILTER F1859	1	Z101
46-28559W-02X	PIN BASE *2 TJC1-2A	1	P802 FOR POWER CORD
46-33079W-04X	PIN BASE *4 TJC3-4A	1	P005 P2 - P5 FOR IR BD P002A
46-33079W-05X	PIN BASE *5 TJC3-5A	1	P904 P3 - P7 FOR SIDE AV BD
47-RCA035-XX0	RCA JACK AV-3.2-6W-K	1	P901
48-TAC002-XX0	TACT SWITCH	1	S006
48-TAC002-XX0	TACT SWITCH	1	S005
48-TAC002-XX0	TACT SWITCH	1	S004
48-TAC002-XX0	TACT SWITCH	1	S002
48-TAC002-XX0	TACT SWITCH	1	S001
48-TAC002-XX0	TACT SWITCH	1	S003
48-TAC009-XX0	SW. TACT K66T-1C-2.5-G-14	1	S008A
50-03150D-1US7	FUSE 250V/3.15A	1	F801
70-271510-00A	SERVICE CARD	1	FOR PRODUCTION USE
71-270870-0A9	LABEL	2	
11-SA1015-YBX	TRANSISTOR ST2SA1015Y (PNP)	1	Q510
11-SC2482-0BX	TRANSISTOR 2SC2482	1	Q503
11-SC2482-0BX	TRANSISTOR 2SC2482	1	Q502
11-SC2482-0BX	TRANSISTOR 2SC2482	1	Q501
18-FE0272-JNX	RES. M.O. 2.7K OHM 1/2W +/-5%	1	R515
18-FG0123-JHX	RES. M.O. 12K OHM 2W +/-5%	1	R512
18-FG0123-JHX	RES. M.O. 12K OHM 2W +/-5%	1	R511
18-FG0123-JHX	RES. M.O. 12K OHM 2W +/-5%	1	R510
25-BCB221-M1X	CAP. ELEC 220 UF 16V +/-20%	1	C508
25-BLA100-M1X	CAP. ELEC 10 UF 250V +/-20%	1	C506
26-AIM103-KBX	CAP. CER 0.01UF 500V +/-10% B	1	C504
26-AMK221-KBX	CAP. CER 220PF 2KV +/-10% B	1	C505
26-EBP103-ZF1	CAP CER 50V 2.5MM 10KpF -20%+80%	1	C514
35-139730-00X	FERR. BEAD BF60	2	FOR C514 (L505 & L506)
46-10967W-01X	PIN BASE *1 TJC1-1A	1	P503
46-33624H-04X	HS 3P 2468#24 270 TJC3-4Y/SCN-4Y	1	P502 FOR M. BD P402
46-35038H-05X	HS 5P24 380 TJC3-5Y/SCN-5Y	1	P501 FOR M.BD P201
47-CRT001-XX1	SOCKET CRT GZS8-6-AC	1	S501
40-14E10H-SIA1X	P.C.B. SIDE AV BD	1	
41-WJ0060-B00	WIRE BARE JUMPER 6MM	1	J1102
46-35038H-05X	HS 5P24 380 TJC3-5Y/SCN-5Y	1	P904B R - V FOR M.BD P904
47-RCA001-XX0	RCA SOCKET AV-8.4-6 (RED)	1	P1103
47-RCA002-XX0	RCA SOCKET AV-8.4-6 (WHITE)	1	P1102
47-RCA003-XX0	RCA SOCKET AV-8.4-6 (YELLOW)	1	P1101
02-IRR001-XX1	IR RECEIVER MODULE HRM380017	1	IR1001
14-LED05R-XX1	LED RED FB205	1	D051C
25-BCB220-M1X	CAP. ELEC 22 UF 16V +/-20%	1	C011A
46-CD016T-04J01	HS 4P UL2468#24 L=160MM	1	P002A FOR M. BD P005
62-226920-0HA	LED HOLDER ABS-LG H121 (HB)	1	
90-269080-ZU0U	CLEAN COATING TC-131L 14KG/BARREL	0.1	
54-114000-00X	FELT TAPE (150MMX19MMX0.3MM)	4	STICK ON REAR CAB.
59-130460-00X	RUBBER PAD (25MMX7MM)	2	STICK ON REAR CAB.(FOOTING)

Alignment Procedure of M123A Color TV

1. FLOWCHART OF ALIGNMENT PROCEDURE

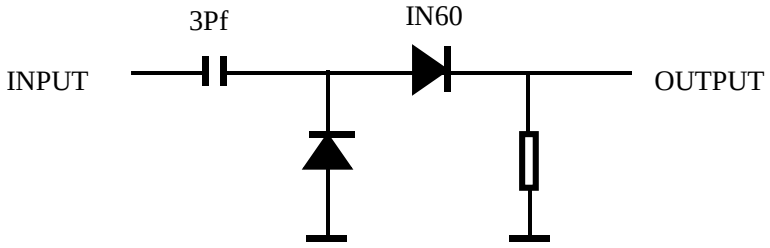


2 Adjustment of B+ voltage

1) Apply 120VAC(±5V) to mains power input, and Philips standard testing pattern to RF input.
2) Adjust VR830 in STANDARD mode until voltage at TP2 (B+) is 106V ±0.5V.

3. RF AGC adjustment

Observe monitor the collector waveform of Q101 with the probe of Oscilloscope as illustration below. Select channel 2 (>70dB) from the antenna input. Enter D-mode, select menu6 to adjust RFAGC item until the monitor peak value to 0.8$V_{p\text{-}p}$.



4. Screen & Focus voltage adjustment

① Apply pattern signal in normal status, enter D-mode, press “TV/AV” button to turn off the vertical output.
② Adjust the SCRREEN switch on the flyback transformer to make a horizontal shining line just visible on the screen.
③ Turn on the vertical output, adjust the “FOCUS” on the flyback transformer to obtain the optimum focus.

5. White balance adjustment

1)Apply the black and white pattern in normal status;

2)Alignment of normal color temperature

① Change Color Temperature to normal status
② Use a color analyzer to measure the black side of the screen. By changing the value of RC, GC and BC, set the reading of the color analyzer to X=284, Y=299.

③ Use a color analyzer to measure the white side of the screen. By changing the value of GD, BD, set the reading of the color analyzer to X=284, Y=299.

④ Separately set the brightness and contrast from min. to max., repeat the step 2 and 3 until the reading of the color analyzer is correct.

3)Alignment of warm color temperature

①Change Color Temperature to warm status

②Use a color analyzer to measure the black side of the screen. By changing the value of RC-W, GC-W and BC-W, set the reading of the color analyzer to X=296, Y=294.

③Use a color analyzer to measure the white side of the screen. By changing the value of GD-W, BD-W set the reading of the color analyzer to X=296, Y=294.

④Separately set the brightness and contrast from min. to max., repeat the step 2 and 3 until the reading of the color analyzer is correct.

4)Alignment of cold color temperature

①Change Color Temperature to cold status

②Use a color analyzer to measure the black side of the screen. By changing the value of RC-C, GC-C BC-C , set the reading of the color analyzer to X=279, Y=265.

③Use a color analyzer to measure the white side of the screen. By changing the value of GD-C, BD-C, set the reading of the color analyzer to X=279, Y=265.

④Separately set the brightness and contrast from min. to max., repeat the step 2 and 3 until the reading of the color analyzer is correct

Note: Provided the production line is equipped with the self- White balance adjusting equipment, white balance of M123A chassis can be adjusted automatically as following: Press "I^2C BUS" button under factory mode, the TV set will adjust automatically.

6. Adjustment of Sub-brightness,

① Apply the Grey-scale/Color bar (NTSC signal) to the AV input, in normal status.

② Select BRTC to adjust the sub-brightness, until that the 2^{nd} dark bar of 8 level Grey scale just can be seen.

7. PAL picture geometric adjustment

menu 3

HPOS6/HPOS5（HZ horizontal center of 60/50 HZ Source）

Menu 2

HIGH6/HIGH5(vertical amplitude)

VCEN5/VCEN6(position of vertical center)

VP60/VP50（vertical position）

VLIN6/VLIN5（vertical linearity）

VSC6/VSC5（V-S Correction）

8 initialization

press **sound-effect** under factory mode, the set will initialize, until **"OK"** appears on the screen which means the initialization is finished. After initialization, the set will quit factory mode automatically.

Factory settings

D-mode:

Enter D-Mode by pressing D-Mode ON/OFF key, and then you can enter the D-mode.

S-mode:

Enter S-Mode by pressing VOLUME DOWN key on the unit until the volume decrease to minimum level, then press the DISPLAY key on the remote handset (don't release the volume key) and you can enter S- mode.

After enter D-mode or S-mode, press **OK**, then press program up/down to select menu from menu 1 to menu 22, press **OK** to enter the menu, press program up/down to select item, press volume up/down to adjust the setting. Press D-mode again to quit factory mode.

You can also enter menu 1 to menu 19 directly by pressing digital button 1~9, 0, notebook, CAP, Display, Sleep, Calendar, System/INS, Favorite, Return, Picture.

Menu 1 (Remote key: "1")

Item	*Remark*
RC	**R cut-off setting**
GC	G cut-off setting
BC	B cut-off setting
GD	G drive setting
BD	B drive setting

Menu 2 (Remote key: "2"))

Item	*Remark*
HIGH5	**Height (50Hz)**
VP50	Vertical position (50Hz)
VLIN5	Vertical linearity (50Hz)
VSC5	Vertical S correction (50Hz)
VBLK5	Vertical blanking start & stop [1C, bit 3 ~ 0]
VCEN5	Vertical center (50Hz)

Menu 2 (Remote key: "2")

Item	*Remark*
HIGH6	**60Hz height**
VP60	Vertical position
VLIN6	60Hz Vertical linearity
VSC6	Vertical S correction (60Hz)
VBLK6	Vertical blanking start & stop [1CH, bit 3 ~ 0]
VCEN6	Vertical center (60Hz)

Menu 3 (Remote key: "3")

Item	*Remark*
HPOS5	**Horizontal position (50Hz)**

Menu 3 (Remote key: "3")

Item	*Remark*
HPOS6	**Horizontal position (60Hz)**

Menu 4 (Remote key: "4")

Item	*Remark*
CNTX	Maximum contrast
CNTN	Minimum contrast
BRTX	Maximum brightness
BRTN	Minimum brightness
COLX	Maximum color
COLN	Minimum color
TNTX	Maximum tint level
TNTN	Minimum tint level

Menu 5(Remote key: "5")

Item	*Remark*
BRTC	**50% brightness**
COLC	**50% color**
COLP	Color level for PAL
SCOL	UV gain [06H, bit 6 ~ 4]
SCNT	Sub-contrast [06H, bit 3 ~ 0]
CNTC	50% contrast
TNTCT	50% tint level (TV mode)
TNTCV	50% tint level (AV mode)

Menu 6(Remote key: "6")

Item	*Remark*
ST3	**50% Sharpness (TV mode, 3.58 system)**
SV3	50% Sharpness (AV mode, 3.58 system)
SV4	50% Sharpness (AV mode, other system)
SVD	50% Sharpness (DVD mode)
ASSH	Asymmetric sharpness [04H, bit 7 ~ 5]
SHPX	Maximum sharpness
SHPN	Minimum sharpness

Menu 7(Remote key: "7")

Item	*Remark*	
MOD1	**Bit 0,Bit 1**	under factory mode : 00,11, STD 01:IRC 10:HRC
	Bit 2	STD, IRC,HRC 1: user control 0: under factory mode
	Bit 3	1: forbid CATV 95/96/97
	Bit 4	
	Bit 5	**1: have CCD**
	Bit 6	**1:have V-CHIP**
	Bit 7	1:as Monitor no TV mode
MOD2	**Bit 0,Bit 1**	Speed of searching
	Bit 2	High sensitivity ； 1：yes 0:no
	Bit 3	Volume control：1:PWM
	Bit 4	**AV1: 1：yes 0:no**
	Bit 5	**AV2: 1：yes 0:no**
	Bit 6	YUV: 1：yes 0:no
	Bit 7	
MOD3	Bit 0	
	Bit 1	
	Bit 2	

	Bit 3		
	Bit 4		
	Bit 5	TV，MSP AVL: 1: yes	
	Bit 6	AV，MSP AVL：1:yes	
	Bit 7	MONO+SAP：1：yes 0：no	
OPT	Bit 0	When blue background off (mute pin of CPU): 0: audio mute on 1: audio mute off	
	Bit 1	When blue background off (external mute pin of CPU): 0: audio mute on 1: audio mute off	
	Bit 2	When change channel: 0: picture mute off 1: picture mute on	
	Bit 3	Switch between TV and CATV or change channel in the tune menu 1: picture mute on	
	Bit 4	AFT –MUTE 1: ON,	
	Bit 5	Polarity of Tint	
	Bit 6		
	Bit 7		
OPTM1	Bit 0	TDA98500 0:no 1:yes	Can't be set to 1 at the same time
	Bit 1	MSP34xx 0:no 1:yes	
	Bit 2	1: AV audio out mute when volume is zero or mute	
	Bit 3	1: decreasing contrast when menu on	
	Bit 4	1: OSD don't disappear automatically	
	Bit 5	1:biological	
	Bit 6	0: CH LOCK W/O V-CHIP	
	Bit 7	When turn on 0:child lock off 1:child lock on	
OPTM2	Bit 0		
	Bit 1	Power on mode: 00: standby 01:previous 10&11: force power on	
	Bit 2		
	Bit 3	Hotel mode 1:on 0: off	
	Bit 4	Power on under hotel mode： 00: TV | 01: Video1 | 02: TV2 | 03: Last	
	Bit 5		
	Bit 6	1: under factory mode turn off the set by the remote or power off, then turn on or power on, the set enter factory mode	
	Bit 7	1: D-MODE	
HDCNT			
~~HSTOP~~			

Menu 8 (Remote key: "8")

Item	*Remark*
RFAGC	**RFAGC [12H, bit 5 ~ 0]**
BRTS	Sub brightness for SECAM
OSD	Horizontal position of OSD
OSDF	OSD PLL DATA
CCD OSD	Horizontal position of CCD OSD
CCD OSDF	PLL DATA of CCD OSD
TXCX	OSD intensity when maximum contrast
RGCN	OSD intensity when minimum contrast

Menu 9(Remote key: "9")

Item	*Remark*
V01	**Volume 1**
V25	Volume 25
V50	Volume 50
V100	Volume 100
VOLMAX	**Max volume under hotel mode**
CURTCEN	**Center of the curtain**
VOLX	**Output gain of PIN28 of TMPA8823 or MSP34x5**
PWTM	When use PWM to mute and no sound when changing channel, this item should be minimum as posible

Menu 10(Remote key: "0")

Item	*Remark*	
MDOE4	Bit 0	TV Color system AUTO：1：yes 0：no
	Bit 1	TV Color system NTSC358：1：yes 0：no
	Bit 2	TV Color system PALM：1：yes 0：no
	Bit 3	TV Color system PALN：1：yes 0：no
	Bit 4	AV Color system AUTO：1：yes 0：no
	Bit 5	AV Color system NTSC358：1：yes 0：no
	Bit 6	AV Color system PALM：1：yes 0：no
	Bit 7	AV Color system PALN：1：1：yes 0：no
MDOE5	Bit 0	English: 1：yes 0：no
	Bit 1	French: 1：yes 0：no
	Bit 2	Portuguese: 1：yes 0：no
	Bit 3	Spanish : 1：yes 0：no
	Bit 4	AV Color system PAL443：1：1：yes 0：no
	Bit 5	AV Color system NTSC443：1：1：yes 0：no
	Bit 6	AV AUTO： 1:AUTO1(PAL443 、NTSC358、NTSC443) 0:AUTO2(NTSC358、PALM、PALN)
	Bit 7	
MDOE6	Bit 0	1:auto search function of the menu key on the front panel
	Bit 1	1: curtain when turn on the set
	Bit 2	1: curtain when turn off the set
	Bit3~ 7	V-mute timing when changing channel(01H = 8ms) max :248ms
MDOE7	Bit 0 Bit 1	When sound mode change 11:change to the corresponding mode and ODS display automatically 01: change to the corresponding mode and ODS doesn't display 00,10: change to MONO，ODS doesn't display；
	Bit 2 Bit 3	00，10 ： detect BTSC and Korea stereo automatically 01：force BTSC 11：force Korea stereo
	Bit 4	FINE, 1:yes 0：no
	Bit 5	50Hz block 1:yes 0：no
	Bit 6	1: contrast change when power on

	Bit 7	
MDOE8	Bit 0	**America V-CHIP standard 1：yes 0：no**
	Bit 1	**Canadian V-CHIP 1：yes 0：no**
	Bit 2	**UNRATED，1：yes 0：no**
	Bit 3	**NO RATING，1：yes 0：no**
	Bit 4 ~Bit 7	**Time setting for curtain when turn on the set**
MDOE9	Bit 0 ~Bit 2	**N/A**
	Bit 3	**S-VIDEO ,0:parallel to AV1 1: parallel to AV2**
	Bit 4	**1:sound effect w/o mpx (MSP3465)**
	Bit 5 ~Bit 7	**N/A**

Menu 12(Remote key: "CAP")

Item	*Remark*
OSD2	OSD Horizontal Position
OSDF2	OSD PLL DATA except
PYNX	Normal H.SYNC max
PYNN	Normal H.SYNC min
PYXS	Search H.SYNC max
PYNS	Search H.SYNC min

Menu 13 (Remote key: "Display")

Item	*Remark*	
CLTM	**TV mode**	
CLVO	Video mode	
CLVS	s-video mode	
	Bit 2 ~ 0	YDL [15H, bit 2 ~ 0] (-40ns~240ns)
	Bit 4 ~ 3	NTSC matrix [03H, bit 7 ~ 6] (N1,N2,DVD)
	Bit 5	C gamma [02H, bit 7] (color gamma on/off)
	Bit 6	P/N ID [17H, bit 4] (PAL/NTSC killer sensit.)
	Bit 7	FID [17H, bit 3] (Killer off)
ABL	Bit 1 ~ 0	**ABL gain [16H, bit 5 ~ 4]**
	Bit 3 ~ 2	ABL start point [16H, bit 7 ~ 6]
	Bit 4	WPS [00H, bit 7]
	Bit 5	OSD ABCL [16H, bit 3]
DCBS	Bit 1 ~ 0	Black stretch [15H, bit 4 ~ 3]
	Bit 3 ~ 2	Y gamma [15H, bit 6 ~ 5]
	Bit 5 ~ 4	OSD level [16H, bit 1 ~ 0]
	Bit 7	Blank switch [0CH, bit 7]
FLG0	**Bit 0**	Over modulation [13H, bit 5]
	Bit 1	Aft window size [13H, bit 6]
	Bit 2	Buzz reducer [13H, bit 7]
	Bit 3	**Audio gain switch [14H, bit 7]**
	Bit 4	
	Bit 5	
	Bit 6	
	Bit 7	1: VCO adjust automatically when changing channel
FLG1	**Bit 0**	CW SW [06H, bit 7], control PIN26,
	Bit 1	Slice level [1EH, bit 6]
	Bit 2	Mix gain [15H, bit 7]
	Bit 3	V ramp bias [1DH, bit 4]

	Bit 4	
	Bit 5	
	Bit 6	
	Bit 7	SLO f0 shift(test only)

Menu 14(Remote key: "sleep)

Item	*Remark*	
HAFC	**Bit 1 ~ 0**	**AFC gain (TV mode) [1CH, bit 5 ~ 4]**
	Bit 3 ~ 2	**AFC gain (AV mode) [1CH, bit 5 ~ 4]**
AGCC		
NOIS		
ONTM	V-mute timing when power on (01H = 16ms)	
NSHP	Decreased level of sharpness when noise reduction is on	
PVLVL	X-ray protection start point (00H → 0V & FFH → 5V)	
PLMT	(01H = 8ms)	

Menu 15 (Remote key: "Calendar")

Item	*Remark*
RC-C	**R cut-off setting (for cool color temperature)**
GC-C	G cut-off setting (for cool color temperature)
BC-C	B cut-off setting (for cool color temperature)
GD-C	G drive setting (for cool color temperature)
BD-C	B drive setting (for cool color temperature)

Menu 16 (Remote key: "System/INS")

Item	*Remark*
RC-W	**R cut-off setting (for warm color temperature)**
GC-W	G cut-off setting (for warm color temperature)
BC-W	B cut-off setting (for warm color temperature)
GD-W	G drive setting (for warm color temperature)
BD-W	B drive setting (for warm color temperature)
YUVGC	YUV R cut-off
YUVBC	YUV B cut-off

Menu 17 (Remote key: "FAV")

Item	*Remark*
D-COL	**Dynamic color**
D-BRI	**Dynamic brightess**
D-CON	**Dynamic contrast**
D-SHP	**Dynamic sharpness**

Menu 18 (Remote key: "Return")

Item	*Remark*
S-COL	**Standard color**
S-BRI	**Standard brightess**
S-CON	**Standard contrast**
S-SHP	**Standard sharpness**

Menu 19 (Remote key: "Picture")

Item	*Remark*
M-COL	**Mild color**
M-BRI	**Mild brightess**
M-CON	**Mild contrast**
M-SHP	**Mild sharpness**

Menu 20: no shortcut key

Item	*Remark*
SEG_POINT1	**Highest frequency of VHFL**
SEG_POINT2	**Highest frequency of VHFH**
DATA_VL	**VHFL bandswitch（BB）**
DATA_VH	**VHFH bandswitch（BB）**
DATA_UF	**UHF bandswitch（BB）**
SPE_POS1	**The channel number treated specially**
SPE_DATA1	**Bandswitch in which the special channel （BB）**
SENSI_ON	
SENSI_OFF	

Menu 21: no shortcut key

Item	*Remark*
THEATER-BAS	**Theater bass**
THEATER-TRE	**Theater treble**
CONCERT-BAS	**Concert bass**
CONCERT-TRE	**Concert treble**
BROCAST-BAS	**Brocast bass**
BROCAST-TRE	**Brocast treble**

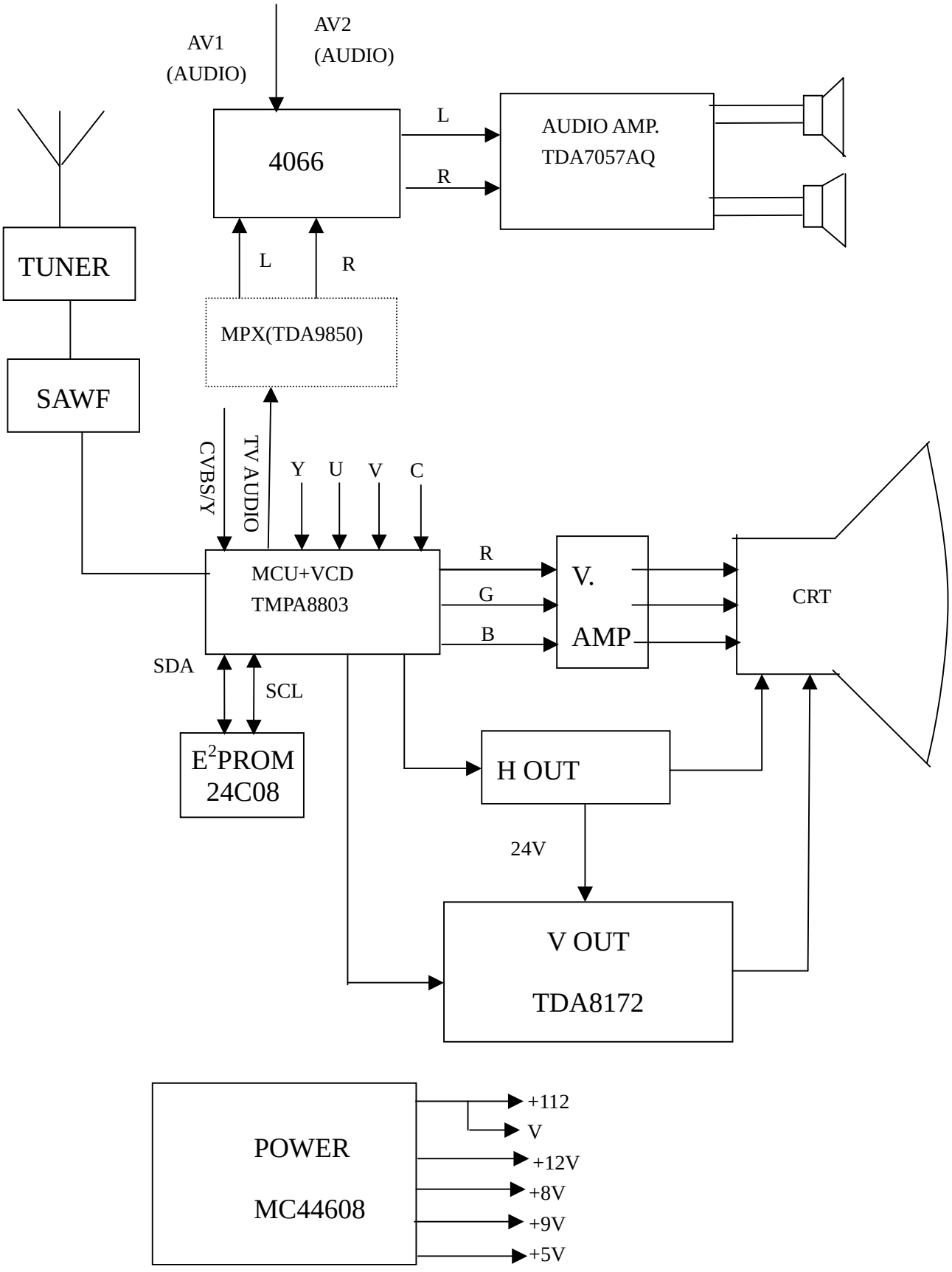
Menu 22: no shortcut key

Item	*Remark*
VOL_MAI	Volume Loudspeaker
GATE	**Carrier-Mute**
VOL-OUT	**AV output gain**
AV GAIN	**AV input Gain**

Note:

① Provided the production line is equipped with the self-adjusting equipment, The adjusted item should be based on the result by such equipment.

② There's difference between PAL geometric/OSD adjustment and NTSC geometric/OSD adjustment. PAL adjustment must be done before NTSC adjustment.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SAWF
CVBS/Y
TV AUDIO
Y
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V
C
MCU+VCD
TMPA8803
R
G
B
V.
AMP
CRT
SDA
SCL
E2PROM
24C08
H OUT
24V
V OUT
TDA8172
POWER
MC44608
+112
V
+12V
+8V
+9V
+5V

M123A

P531 CRT: KR 8, KG 6, KB 11, 10, 9 HEATER, 7, 5 GND, EHT, FOCUS, SCREEN, H1, H2, 200V

P502

P201

IR001

ST-BY

TV/AV

IC601 TDA7057AQ(STEREO)

speaker L 8 OHM W602 P601

speaker R 8 OHM W601 P602

IC601 pins: VOL, NC, LIN, VP, RIN, SIG, VOL, R+, P-G, R-, L-, P-G, L+

IC001 24C08

IC201 TMPA8803CSN

IC201 pins: POWER, RMT-IN, TV Sync, RST, AV 1/2, VOL, SCL0, SDA0, 50/60, 5V, GND, GND, B-OUT, G-OUT, R-OUT, RGB 9V, IK-IN, APC FIL, BLACK DET, AV OUT, Y/C 5V, RF AGC, IF IN, IF IN, IF GND, IF AGC, Deepmph, S-Reg, IF VCC(5V), DIF PLL, DC NF, SIF-IN; TV/AV, RAY, KEY, GND, RESET, X-TAL, X-TAL, TEST, 5V, GND, GND, FBP-IN SCP-OUT, H-OUT, H-AFC, V-SAW, V-OUT, H-VCC, NC, Cb, Y-IN, Cr, TV-GND, C-IN, EXT-IN, DIG.3V3, TV IN, ABCL-IN, AUDIO-OUT, IF-VCC(9V), TV-OUT, SIF-OUT, EXT-AUDIO

IC902 TC4066BP

N. MPX Option

IC901 TC4053BP

TUN01

P901 AV-2: R OUT, L OUT, V OUT, A2 IN R, A2 IN L, V2 IN, Yin, Cr, Cb

P954 A1 IN R, P953 A1 IN L, P952 V1 IN

P956, P955, P951

P903, P1002, P904, P902

SIF, R, L, SCL, SDA1, AUDIO, RST, L2, R2, Lout, Rout

SP01

IC1001 MSP 34X5G

P1004

W. MPX Option

IC301 STV9302

P803

T803

T801

T402

AC 220V P802

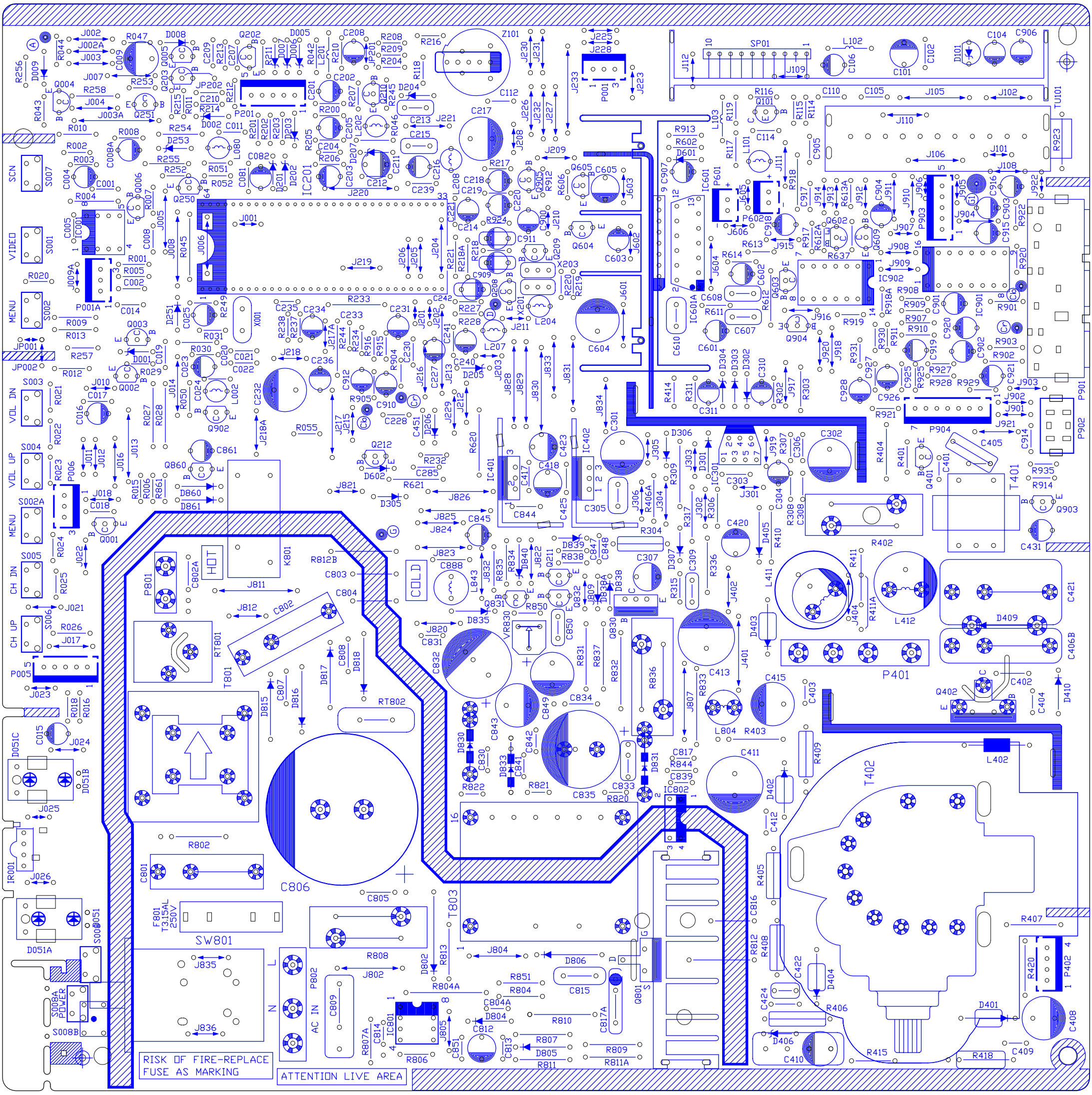
VERT COIL, HOR COIL

FOCUS, SCREEN

EHT

01-0M123A-MA1

2003-10-31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S008A POWER
S008B
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ATTENTION LIVE AREA
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P904
SP01
Z101
IC902
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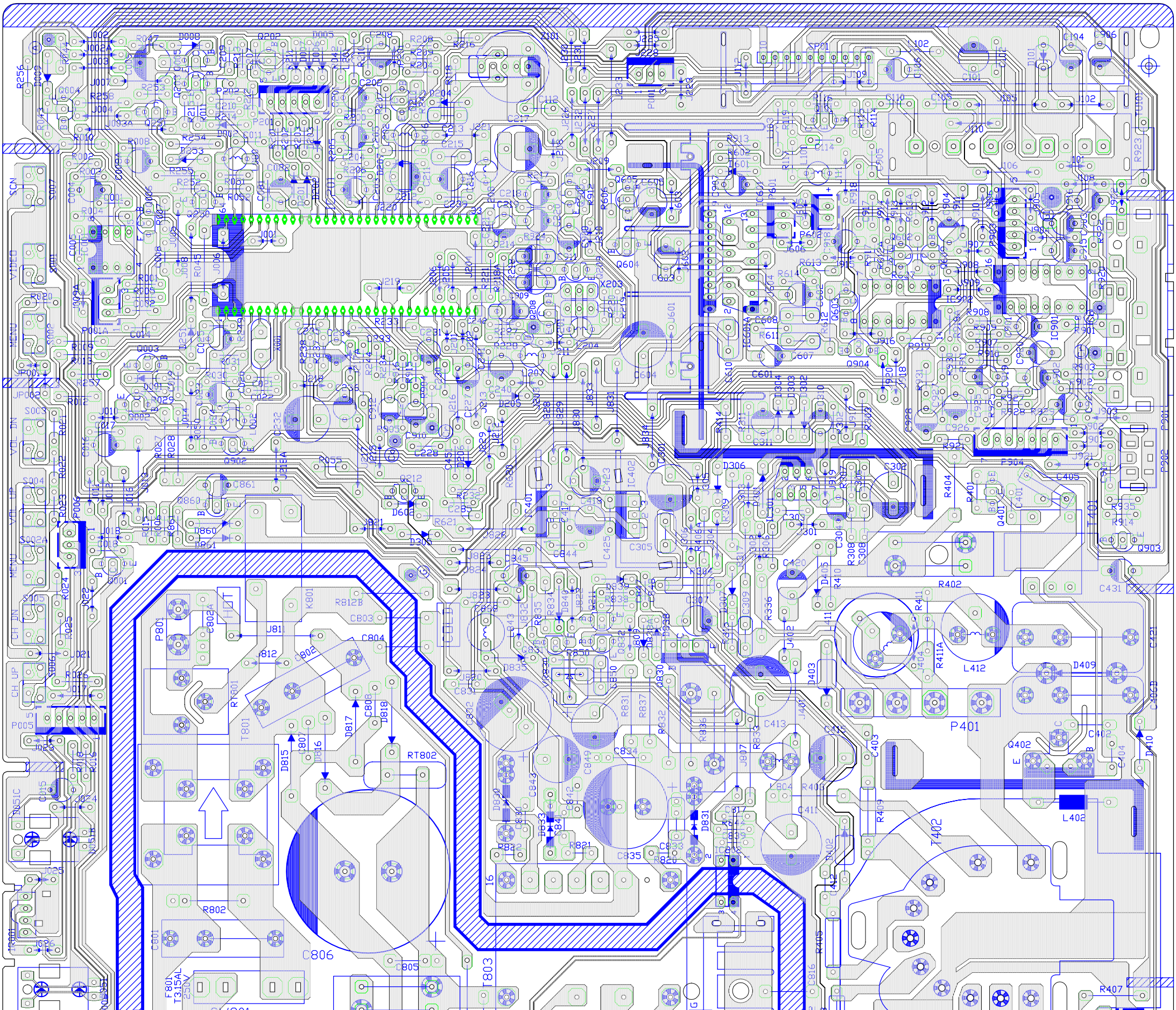
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Q901
Q902
Q904
Q401
Q402
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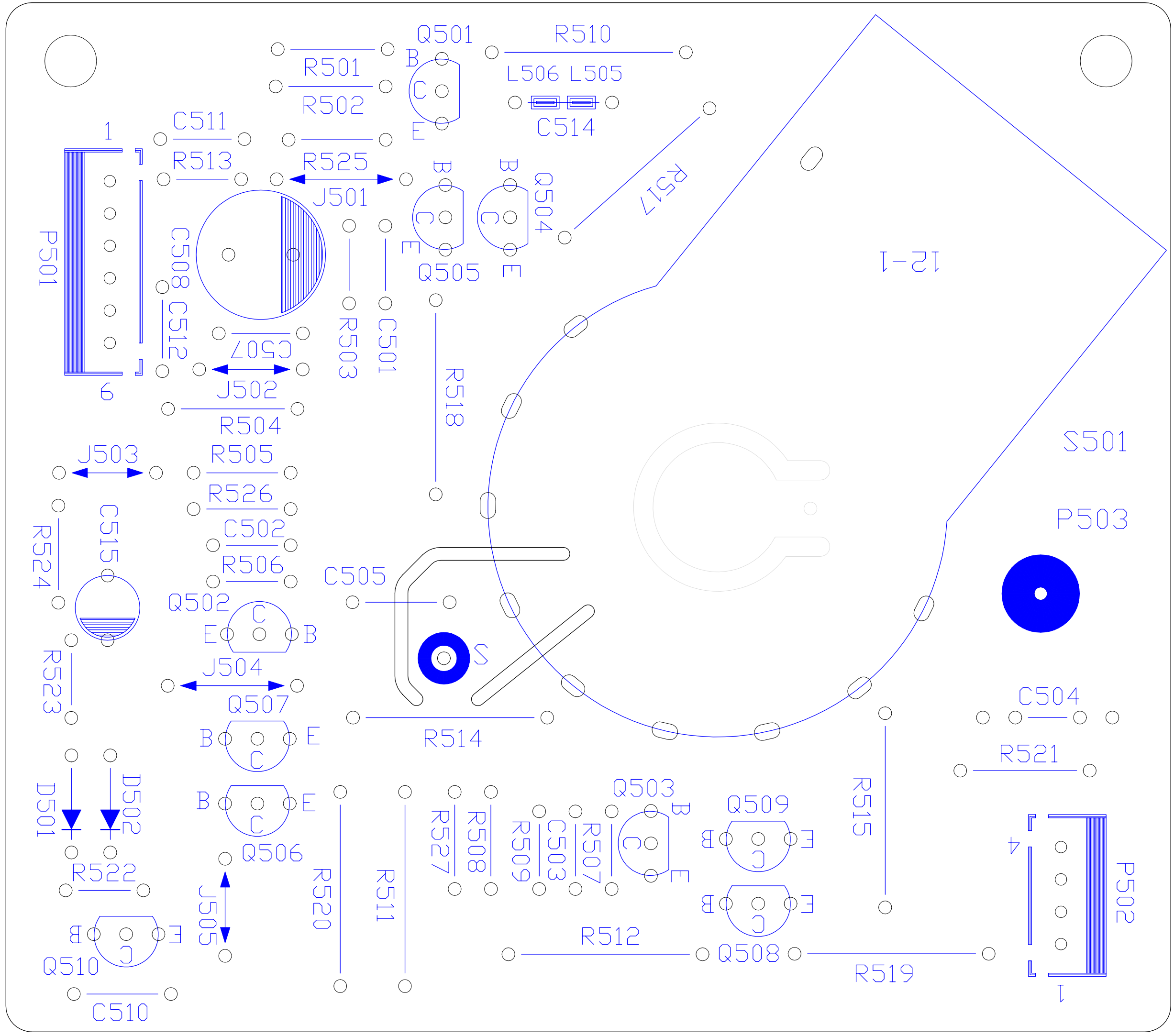
IC402
IC601
IC801
D051A
RISK OF FIRE-REPLACE
FUSE AS MARKING
ATTENTION LIVE AREA
AC IN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R501
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40-0213S5-CRFIX

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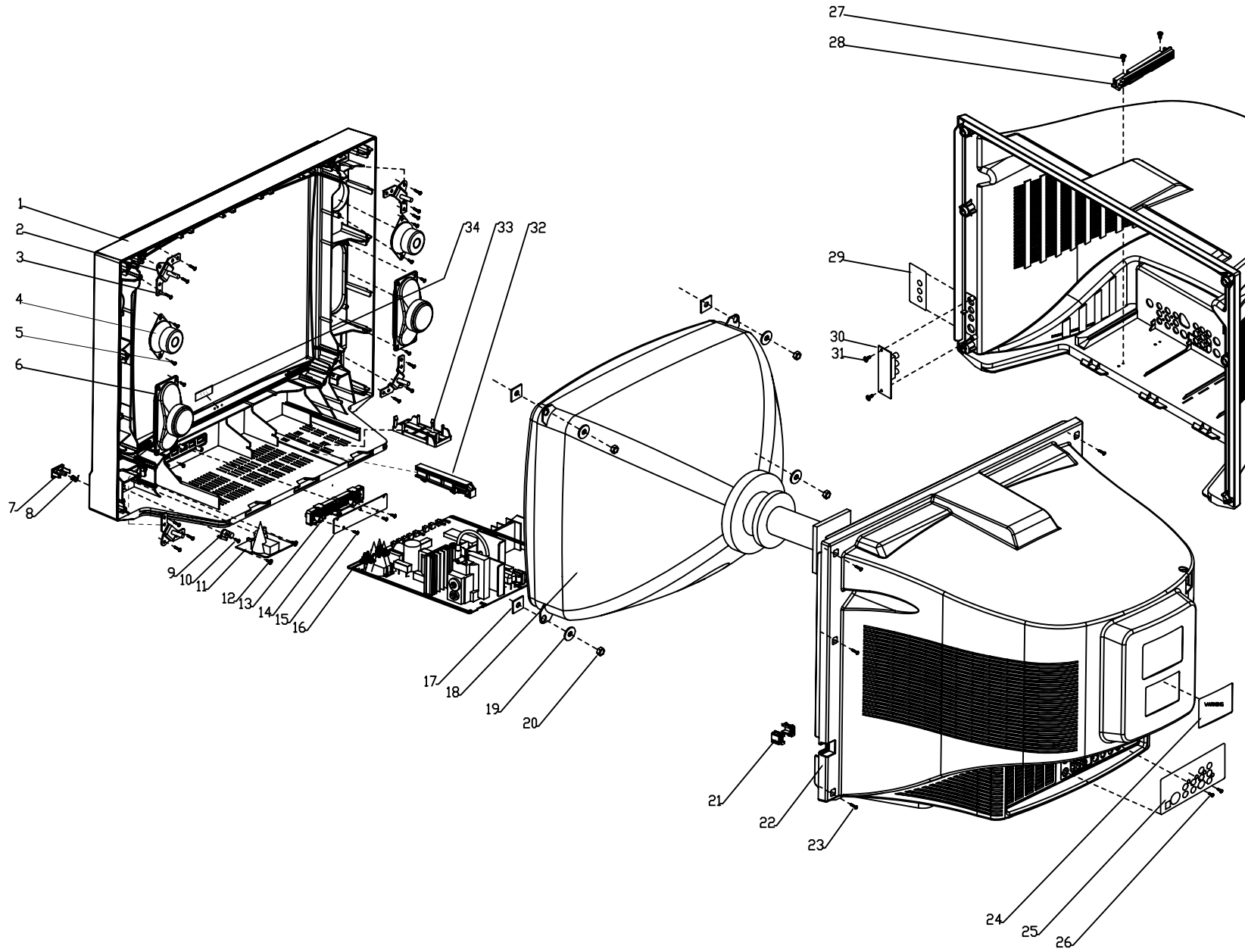
R522
C510
C513
P501
C515
R524
R523
D501

标记	更改内容	更改日期	签名	



序号	名 称	物料编号	图 号	数量	备 注
34	TCL校牌	07-Z06016-L10		1	
33	车区电源支架			1	
32	导轨	02-100129-005		2	
31	自攻螺钉 Φ 3 X 10 AB	03-030100-004		2	
30	侧AV端子			1	
29	侧按胶片	09-010051-001		1	
28	导轨	02-Y06060-0201		1	
27	自攻螺钉 Φ 3 X 10 AB	03-030100-004		2	
26	自攻螺钉 Φ 3 X 10 BT	03-030100-BT3		2	
25	后AV胶片	09-010201-J17		1	
24	后整机胶片	09-010200-J072		1	
23	螺钉 B 4 X 20 AB	03-040200-002		4	
22	后壳	05-010600-0C6		1	
21	电源按片	09-100625-001		1	
20	NUT M 6.0 X 1.0	05-060100-001		4	
19	介子6 X 20 X 2MM	05-100200-201		4	
18	显象管			1	
17	锁芯线管 (220mmX32mm)0.8mm	04-Y14740-000		1	
16	锁芯			1	
15	螺钉	03-030080-0B401		1	
14	排母按和板			1	
13	排针	06-1H1.1PB-00A		1	
12	组合螺钉 3.0 X 12	03-Z30120-004		1	核电源开关板
11	电源带船开关			1	
10	自攻螺钉 Φ 3 X 8 AB	03-030080-0A03		8	
9	透镜	09-C0011E-00C		1	
8	弹簧 6mmX0.65mmX0.5mm	07-Y12060-000		1	
7	电源板	08-E111PB-00A		1	
6	喇叭			2	
5	自攻螺钉 Φ 3 X 8 AB	03-030080-004		8	
4	高压螺帽			1	
3	S/T SCREW B4X15AB	03-040150-004		10	
2	CRT METAL MTG	07-Y25570-000		1	
1	前壳	01-Y612PL-0C6		1	

		投影方法	产品型号	21E12	
设 计		爆炸图	WP		
审 核			等级标记	质量	比例
会 签					
标准化		一般公差	线性: ±	第 页	共 页
经 准			角度: ±		